

**REMARKS**

Applicants thank the Examiner for the very thorough consideration given the present application. Claims 1-12 are currently pending in this application. No new matter has been added by way of the present Amendment. For instance, the amendment to claim 2 is supported by claim 1 as originally filed. Accordingly, no new matter has been added.

In view of the amendments and remarks herein, Applicants respectfully request that the Examiner withdraw all outstanding rejections and allow the currently pending claims.

**Double Patenting Issues**

Claim 1 stands rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 7,316,864 (hereinafter U.S. '864). Applicants respectfully traverse.

The Examiner asserts that U.S. '864 discloses a binder for an electrode of a lithium ion secondary battery, which comprises a copolymer comprising: 15 to 80 weight% of units from an ethylenically unsaturated monomer (A) whose homopolymerization yields a polymer soluble in N-methylpyrrolidone (NMP); and 20 to 85 weight% of units from an ethylenically unsaturated monomer (B) whose homopolymerization yields a polymer insoluble in NMP.

Applicants enclose herewith a Terminal Disclaimer, disclaiming the terminal part of the statutory term of any patent granted on the instant application, which would extend beyond the expiration date of the full statutory term of U.S. '864. Accordingly, this rejection has been obviated.

Reconsideration and withdrawal of this rejection are thus respectfully requested.

**Issues Under 35 U.S.C. §102(b)**

Claims 1-12 stand rejected under 35 U.S.C. §102(b) as anticipated by Yamamoto et al. (U.S. 6,756,153) (hereinafter Yamamoto '153). Applicants respectfully traverse.

The Examiner asserts that Yamamoto '153 discloses a binder for an electrode of a lithium ion secondary battery, which comprises a copolymer comprising: 15 to 80 weight% of units from an ethylenically unsaturated monomer (A) whose homopolymerization yields a polymer soluble in NMP; and 20 to 85 weight% of units from an ethylenically unsaturated monomer (B) whose homopolymerization yields a polymer insoluble in NMP.

The Examiner further asserts that, since Yamamoto '153 "discloses the same binder desired by the applicant...it is inherent that the copolymer exhibits a swelling degree of 4 or below".

Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of anticipation. For anticipation under 35 U.S.C. §102, the reference must teach each and every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present. The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993). To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present". *In re Robertson*, 169 F.3d 743, 49 USPQ2d 1949 (Fed. Cir. 1999). The mere fact that a certain thing may result from a given set of circumstances is not sufficient. *Id.*

Initially, Applicants note that, contrary to the Examiner's assertion, Yamamoto '153, having a publication date of June 29, 2004, is not prior art against the present invention under 35 U.S.C.

102(b). For this reason alone, the present rejection is improper and should be withdrawn. [However, see corresponding WIPO publication].

Moreover, Applicants submit that Yamamoto '153 fails to explicitly or implicitly disclose a binder as presently claimed.

The present invention is directed, *inter alia*, to a binder for an electrode of a lithium ion secondary battery, which comprises a copolymer comprising: 15 to 80 weight% of units from an ethylenically unsaturated monomer (A) whose homopolymerization yields a polymer soluble in N-methylpyrrolidone (NMP); and 20 to 85 weight% of units from an ethylenically unsaturated monomer (B) whose homopolymerization yields a polymer insoluble in NMP, wherein the copolymer **exhibits a swelling degree of 4 or below** (emphasis added) (e.g., claim 1).

Yamamoto '153 discloses a binder composition comprising structural units derived from a monoethylenically unsaturated carboxylic acid ester monomer. However, as acknowledged by the Examiner, Yamamoto '153 does not disclose that the resulting copolymer exhibits a swelling degree of 4 or below in an electrolyte obtained by dissolving LiPF<sub>6</sub> in a concentration of 1 mole/liter into a solvent of 1:2 mixture of ethylene carbonate and diethyl carbonate.

The Examiner states that the copolymers of Yamamoto '153 would inherently have a swelling degree as presently claimed. Applicants respectfully disagree. As evidenced by the Experimental Report enclosed herewith, the copolymer of Yamamoto '153 does not exhibit a swelling degree of 4 or below in an electrolyte.

Applicants have reproduced Examples 3 and 7 of Yamamoto '153, whose monomer concentration overlaps the presently claimed ranges. As shown by the enclosed Report, the copolymers of Yamamoto '153 exhibit a swelling degree of 5.1 in an electrolyte.

Yamamoto '153 fails to explicitly or implicitly teach every limitation of the present invention. Reconsideration and withdrawal of this rejection are thus respectfully requested.

**Conclusion**

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and objections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Marc S. Weiner, Reg. No. 32,181 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.147; particularly, extension of time fees.

Dated: **JUL 14 2008**

Respectfully submitted,

By 

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Attachment: Terminal Disclaimer  
Experimental Report